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Patent Search

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Abstract:

INNOVATIVE CYBER-PHYSICAL SYSTEM BASED ON THE INTERNET OF THINGS (IOT) AND CLOUD COMPUTING TO MONITOR WATER QUALITY IN RURAL AREAS Abstract: data environment, we develop personalized information of college libraries based on big data from three aspects: the overall architecture of the system model, the full model of the system, and the design of system interface modules according to the design principles and requirements of the personalized information service system university library Service system design. In terms of the functional design of the platform, the service platform is divided into four levels: accurate identification of users based on big data, personalized customized services based on artificial intelligence, academic research and discussion space based on integrated media, and fine-grained resource aggregation based on knowledge. On this basis, a centralized model of individualized services of university libraries including internal and external personnel information resources, technology, services, processes, platforms, and environment has been constructed. Artificial intelligence (AI) is one of the emerging trends and of computing in libraries. It involves programming computers to do things, which if done by humans, would be said to require intelligence. The ultimate promise of artificial intelligence in libraries is to develop computer systems or machines that think, behave, and in fact rival human intelligence, and this clearly has major implications on librarianship. The application of artificial intelligence in the library has become pervasive. They include expert systems for reference services, book reading and shelf-robots, virtual reality for immersive learning among others. Although the incorporation of artificial intelligence in libraries can be perceived to alienate librarians from it will probably help libraries do more rather than taking over the jobs of librarians. It will enhance their services delivery. Artificial intelligence will greatly improve library operations and services and will upgrade and heighten the relevance of libraries in an ever-changing digital society. Due to the effects of climate change and the difficulty of anticipating people's needs, water distribution networks are essentially dynamic. Keeping up with the uncertainties is a major challenge while operating such a system. Previous systems were unable to provide applications with the support they required to adapt to a constantly shifting physical environment. Yet, technological improvements led to the improvement of water delivery systems in a number of ways. This has led to the incorporation of recent technological advancements in sensing and instrumental communication and networking, computing and control, and water supply system architecture, with the aim of enhancing water system efficiency. In this regard, the physical system signifies a change in how individuals view technology. In this paper, we investigate how the CPS might be used to monitor the water system and define its significance in this context. In addition, the conditions for each application of CPSs are noted. Its potential use in water system monitoring is also being researched. The testing challenges in WSSs for applications have been identified. Then, we address briefly some potential future study directions.

Complete Specification**Description: Descriptions**

As a result of the method in which markets operate being altered by new technologies, there is greater pressure on the sector to become more flexible and adapt in order to meet the markets' ever-changing needs. Businesses are undergoing considerable changes to their production methods, technology infrastructures, and management styles in order to meet the increasing efficiency, productivity, and quality requirements of the global market. Automation, digitalization, and artificial intelligence, along with the widespread availability and low cost of computing power, smart sensors, data acquisition systems, intelligent robotics, information and communication technology, the Internet of Things, Big Data, and cloud computing, have all contributed to enhanced performance and productivity across all industries. The majority of efficiency and output gains may be attributed to technology advances in these areas. Intelligent manufacturing is replacing conventional production as a result of digitization and other advances in cutting-edge technology. As a result of these changes, we are currently seeing "Industry 4.0," or the fourth industrial revolution. Humans in the modern world require increasing quantities of potable water. In contrast, climate change is destabilizing the water cycle, which is damaging to water resources. Climate change is responsible for this disaster. As a result, worldwide water scarcity has become a major concern. As the global water crisis deepens, water utilities adopt new technical paradigms to maximise the use of the available water. The ultimate goal of the construction of huge, complex water delivery systems, also known as water supply networks, by water utilities across the nation is to provide clean drinking water to all citizens. According to the United Nations' Sustainable Development Goals, obtaining clean water is an important objective. Yet, there are substantial obstacles that make it difficult for urban WSSs to operate effectively, which may impede progress towards this objective. To be more specific, one of the most serious problems with the operation of WSS is that it regularly loses a substantial volume of water. Despite the fact that the amount of water lost due to leaking pipes varies from system to system, it has an effect on the entire network. Water companies now confi

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